

JOINT CLAIM CONSTRUCTION STATEMENT  
CASE NO.: 5:18-CV-05194-LHK-VKD

Pursuant to Northern District of California Patent Local Rule 4-3, Plaintiff Sensor Electronic Technology, Inc. (“SETi”) and Defendants Bolb, Inc. (“Bolb”) and Quantum Egg, Inc. (“Quantum Egg”) (collectively, the “Parties”) hereby provide their Joint Claim Construction Chart and Prehearing Statement.

### **I. Local Patent Rule 4-3(a) - Agreed Constructions**

| <b>Patent Claims</b>            | <b>Term</b>             | <b>Agreed Construction</b>                  |
|---------------------------------|-------------------------|---|
| '496 patent claims 2, 8, and 13 | “tensile sublayers”     | “sublayers experiencing tensile stress”     |
| '496 patent claims 2, 8, and 13 | “compressive sublayers” | “sublayers experiencing compressive stress” |
| '496 patent claim 7             | “mesa structure”        | “a raised substantially flat structure”     |

### **II. Local Patent Rule 4-3(b) - Disputed Constructions**

The table below provides a full list of all disputed terms and the parties proposed constructions. A table providing the citations to the evidence relied upon by the parties is attached as Exhibit A.

|   | <b>Patent Claims</b>       | <b>Term</b>   | <b>Plaintiff's Construction</b>  | <b>Defendant's Construction</b>  |
|---|----------------------------|---|--|--|
| 1 | '965 patent claims 1 and 2 | “a volume corresponding to a flowable liquid product”                         | Plain and ordinary meaning, or in the alternative, “a space that can contain a flowable liquid product”                    | “the space that can be occupied by the flowable liquid product when the case is closed”              |
| 2 | '965 patent claim 1        | “configured to enclose a volume corresponding to a flowable liquid product”   | Plain and ordinary meaning, or in the alternative, “shaped to contain a volume corresponding to a flowable liquid product” | “configured to contain a flowable liquid product within a space so that the product cannot leak out” |
| 3 | '965 patent claim 1        | “[wherein the flowable liquid product] can be accessed when the case is open” | Plain and ordinary meaning.  | “opening the cover is sufficient to gain access to the flowable liquid product”                      |
| 4 | '965 patent claim 1        | “cover”   | Plain and ordinary meaning.  | “a lid or cap that seals the case when closed or attached”   |

Holland & Knight LLP  
 31 West 52nd Street  
 New York, NY 10019  
 Tel: 212.513.3200  
 Fax: 212.385.9010

|   | Patent Claims        | Term   | Plaintiff's Construction   | Defendant's Construction  |
|---|----------------------|--|--|---|
| 5 | '965 patent claim 1  | "[a cover] configured to selectively close and open the case"  | Plain and ordinary meaning.  | "configured to give access to the flowable liquid product when open and seal the case when closed, preventing the flowable liquid product from leaking out"   |
| 6 | '965 patent claim 2  | "second compartment defines the volume [such that the at least one ultraviolet radiation source is configured to generate ultraviolet radiation for disinfecting the second portion of the flowable liquid product]" | Plain and ordinary meaning, or in the alternative, "the volume includes the second compartment"  | Indefinite<br><br><u>In the alternative:</u><br><br>"only the second compartment is exposed to ultraviolet radiation from the at least one ultraviolet radiation source"  |
| 7 | '965 patent claim 10 | "control system for managing the ultraviolet radiation"  | Plain and ordinary meaning, or in the alternative:<br><br>Should a construction be necessary, but this element not be found to be a means-plus-function limitation (as asserted by Plaintiff): "a system that controls the generation of ultraviolet radiation"<br><br>or<br><br>Should a construction be necessary, but this element found to be a means-plus-function limitation (as asserted by | This term is governed by 35 U.S.C. § 112(6).<br><br><b>Function:</b> managing the ultraviolet radiation<br><br><b>Structure:</b> no corresponding structure (indefinite) because the specification fails to disclose an algorithm that performs the recited function. |

Holland & Knight LLP  
 31 West 52nd Street  
 New York, NY 10019  
 Tel: 212.513.3200  
 Fax: 212.385.9010

|    | Patent Claims              | Term                                      | Plaintiff's Construction   | Defendant's Construction  |
|----|----------------------------|---|--|---|
|    |                            |   | Defendant): the function "managing the ultraviolet radiation" requires no construction. Corresponding structure is disclosed at 11:37-67 and includes equivalents thereof. |   |
| 8  | '562 patent claim 1        | "contact"                                 | Plain and ordinary meaning, or in the alternative, "an electrical connection, for example, an electrode"   | "conductive structure providing an electrical connection to the semiconductor structure, for example, an electrode"         |
| 9  | '562 patent claim 1        | "corner"                                  | Plain and ordinary meaning, or in the alternative, "the portion of the periphery of an object where two sides meet"  | "a location, not necessarily angular, where two sides or edges meet"  |
| 10 | '562 patent claims 1 and 4 | "[having a] lateral profiled shape"       | Plain and ordinary meaning, or in the alternative, "the plan-view outline of a structure"  | "rounded or beveled shape in a direction parallel to the semiconductor surface"   |
| 11 | '562 patent claim 1        | "at least one edge"                       | Plain and ordinary meaning, or in the alternative, "a boundary where two surfaces of an object meet"   | Indefinite<br><br><u>In the alternative:</u><br><br>"at least one of the boundaries where two surfaces of the contact meet" |
| 12 | '562 patent claims 1 and 5 | "[having a] perpendicular profiled shape" | Plain and ordinary meaning, or in the alternative, "the side-view outline of a structure"  | "a stepped or otherwise non-linear shape in a direction perpendicular to the semiconductor surface"                         |

Holland & Knight LLP  
 31 West 52nd Street  
 New York, NY 10019  
 Tel: 212.513.3200  
 Fax: 212.385.9010

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|----|------------------------------------|--|---|--|
| 13 | '562 patent claim 1                | "[provides a] non-planar transition"                                     | Plain and ordinary meaning, or in the alternative, "the side-view outline is not flat"  | "transition from the contact top surface to the semiconductor surface that does not lie in a single plane"   |
| 14 | '496 patent claims 1, 7, and 12    | "[is] transparent[to light generated by the light generating structure]" | Plain and ordinary meaning, or in the alternative, "allows light generated by the light generating structure to pass through"   | "allows at least ten percent of the generated light to pass through"   |
| 15 | '496 patent claims 1, 7, and 12    | "contact semiconductor layer"  | Plain and ordinary meaning, or in the alternative, "a semiconductor layer that provides an electrical connection to the light generating structure"   | "an electrically conductive semiconductor layer (e.g., an n-type or p-type doped layer) that provides an electrical connection to the heterostructure [claims 1, 12] or device [claim 7]"  |
| 16 | '496 patent claims 1, 4, 7, and 12 | "embedded partially relaxed sublayer"                                    | "The p-type contact semiconductor layer and/or the n-type contact semiconductor layer incorporates within that layer a semiconductor sublayer that includes dislocations that reduce stress"  | "a sublayer that includes dislocations that reduce stress and is surrounded by the layer it is incorporated into"  |
| 17 | '496 patent claims 1, 7, and 12    | "dislocation blocking structure"   | Should this element not be found to be a means-plus-function limitation (as asserted by Plaintiff):<br>"an epitaxially grown semiconductor layer having substantially fewer dislocations at a first side than at a second side"<br><br>or | This term is governed by 35 U.S.C. § 112(6).<br><br><b>Function:</b> blocking dislocations<br><br><b>Structure:</b> a layer including alternating compressive and tensile sublayers, as disclosed in the specification at 8:1-9, 8:20-23, 8:37-41, 9:4-40, |

Holland & Knight LLP  
 31 West 52nd Street  
 New York, NY 10019  
 Tel: 212.513.3200  
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|----|---------------------------------|---|---|---|
|    |                                 |   | Should this element found to be a means-plus-function limitation (as asserted by Defendant): the only possible functional language is "dislocation blocking," requires no construction. Corresponding structures are disclosed at 8:1-4; 8:4-8; 8:9-19; 8:20-23; 8:37-41; 9:4-20; 9:21-40; 9:55-60; 10:2- 11; 10:20-11:3; 11:4-21; 11:51- 61 Figs. 7, 8, 9A, 9B, 10A, 10B, 11A, 11B, and 14 and includes equivalents thereof. The dislocation blocking structure includes a graded composition that changes from a first side of the dislocation blocking structure to a second side thereof. | 9:55-60, 10:2-11, 10:20-11:3, and 11:51-61 and Figs. 7, 8, 9A, 9B, 10A, 10B, 11A, 11B, and 14 |
| 18 | '496 patent claims 1, 7, and 12 | "graded composition[that changes from a first side of the dislocation blocking structure to a second side thereof]" | "The composition of the dislocation blocking structure changes across its thickness"  | "composition that gradually and monotonically changes from one side to the opposite side"     |

Holland & Knight LLP  
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|----|----------------------|---|---|--|
| 19 | '496 patent claim 4  | "lattice mismatch is obtained by a change in an aluminum molar content of the partially relaxed sublayer" | "The amount of lattice mismatch changes with the amount of aluminum within the partially relaxed sublayer"  | Indefinite<br><br><u>In the alternative:</u><br><br>"lattice mismatch between the partially relaxed sublayer and an immediately adjacent sublayer at the interface between them is obtained by a difference in their respective aluminum molar contents" |
| 20 | '468 patent claim 11 | "dislocation bending structure"   | Should this element not be found to be a means-plus-function limitation (as asserted by Plaintiff):<br>"an epitaxially grown semiconductor layer having bent dislocations resulting in substantially fewer dislocations at a first surface than at a second surface"<br><br>or<br><br>Should this element found to be a means-plus-function limitation (as asserted by Defendant): the only possible functional language is "dislocation bending," which requires no construction. The corresponding structures are described at 3:45-52 or 4:24-36 or 7:5-9 or 7:9-12; 7:12-14; or 7:14-19 or 7:34-52 and Figs. 4-9 and includes | This term is governed by 35 U.S.C. § 112(6).<br><br><b>Function:</b> bending dislocations<br><br><b>Structure:</b> a plurality of non-identical layers, as disclosed in the specification at 3:45-57, 4:24-36, 7:5-26, 7:34-8:24, and Figs. 4-9          |

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|    | Patent Claims        | Term  | Plaintiff's Construction  | Defendant's Construction  |
|----|----------------------|---|---|---|
|    |                      |   | equivalents thereof.  |   |
| 21 | '468 patent claim 11 | "means for causing at least some dislocations propagating from the substrate to at least one of: bend or annihilate, prior to reaching the active region" | The function requires no construction; the structure is described at 3:45-52 or 4:24-36 or 7: 5-9 or 7:9-12; 7:12-14; or 7:14-19 or 7:34-52 and includes equivalents thereof. The corresponding structure includes a plurality of non-overlapping periods, wherein each period includes: a first layer composed of a material including an element; and a second layer composed of a material including the element, wherein a molar fraction of the element differs for the first and the second layer by at least five percent. | <p>This term is governed by 35 U.S.C. § 112(6).</p> <p><b>Function:</b> causing at least some dislocations propagating from the substrate to at least one of: bend or annihilate, prior to reaching the active region</p> <p><b>Structure:</b> a plurality of non-identical layers, as disclosed in the specification at 3:45-57, 4:24-36, 7:5-26, 7:34-8:24, and Figs. 4-9</p> |
| 22 | '468 patent claim 14 | "the difference in the molar fractions is selected based on a thickness of at least one of the first layer or the second layer"                           | Plain and ordinary meaning.   | Indefinite (both apparatus and step of making apparatus)  |
| 23 | '468 patent claim 26 | "the material"  | Refers back to the recitations: "a first layer composed of a material" and "a second layer composed of a material" for antecedent basis, <i>i.e.</i> , the first layer and second layer are both aluminum gallium nitride.  | Indefinite  |



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|----|--|---|--|---|
| 24 | '133 patent claim 19                   | "superlattice structure"  | "A semiconductor layer including a plurality of barrier sublayers alternating with a plurality of well sublayers"  | "a structure composed of multiple alternating thin, non-identical semiconductor layers"   |
| 25 | '133 patent claim 19                   | <p>"each period including two layers formed of group III nitride materials . . . having molar fractions x and x', where <math>x &gt; x'</math>"</p> <p>"each period including two layers formed of group III nitride materials . . . having molar fractions y and y', where <math>y &gt; y'</math>"</p> | <p>"The first superlattice includes a repeating pattern of pairs of layers, each layer includes nitrogen, aluminum and another group III element, and the repeating pattern includes repeating the same higher/lower aluminum molar fraction in each pair"</p> <p>"The second superlattice includes a repeating pattern of pairs of layers, each layer includes nitrogen, aluminum and another group III element, and the repeating pattern includes repeating the same higher/lower aluminum molar fraction in each pair"</p> | Indefinite  |
| 26 | '420 patent claims 1, 2, 4, 13, and 14 | "short period superlattice"   | "A semiconductor layer with a plurality of barrier sublayers alternating with a plurality well sublayers, where the combined thickness of a barrier and well is short (thin)."   | "a superlattice having a few-monolayer-thick wells and barriers, in which the barriers are thin enough that carriers tunnel through them" |

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 New York, NY 10019  
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 Fax: 212.385.9010

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|----|----------------------------------|---|---|--|
| 27 | '420 patent claims 1 and 4       | "barrier"                                     | Plain and ordinary meaning, or in the alternative "a semiconductor layer having a higher bandgap than the layers above and below"   | "a sublayer providing a difference in potential that impedes flow of charge carriers"  |
| 28 | '420 patent claims 1 and 13      | "transparent regions"                         | Plain and ordinary meaning, or in the alternative "regions of the barrier that permit light at or near the wavelength produced by the device to pass through"                           | Indefinite<br><br><u>In the alternative:</u><br><br>"distinct regions that have a transmission coefficient of at least 50% for a target wavelength"  |
| 29 | '420 patent claims 1, 12, and 13 | "higher conductive regions"                   | Plain and ordinary meaning, or in the alternative "regions of the barrier that are more conductive than the transparent regions"  | "distinct regions occupying a sufficient area of the area of the lateral cross section of the barrier to keep a voltage drop across the SPSL within a target range"  |
| 30 | '420 patent claims 4, 5, and 14  | "graded composition"                          | Plain and ordinary meaning, or in the alternative, "the composition of the at least one barrier changes across its thickness"   | "composition that gradually and monotonically changes from one side to the opposite side"  |
| 31 | '420 patent claim 12             | "interconnected network[of conductive paths]" | Plain and ordinary meaning, or in the alternative, "the higher conductive regions having different composition from the surrounding material and that provide paths to conduct current" | "domains including multiple smaller regions, each consisting of atoms connected by conductive paths wholly contained within the region, separated from each other by gaps, forming conductive channels allowing for conductivity throughout the semiconductor layer" |

### III. Local Patent Rule 4-3(c) – Most Significant Terms

|   | Patent Claims                      | Term   | Plaintiff's Construction   | Defendant's Construction   |
|---|------------------------------------|--|--|--|
| 1 | '965 patent claim 1                | "cover"  | Plain and ordinary meaning.  | "a lid or cap that seals the case when closed or attached"   |
| 2 | '965 patent claim 2                | "second compartment defines the volume [such that the at least one ultraviolet radiation source is configured to generate ultraviolet radiation for disinfecting the second portion of the flowable liquid product]" | Plain and ordinary meaning, or in the alternative, "the volume includes the second compartment"  | Indefinite<br><br><u>In the alternative:</u><br><br>"only the second compartment is exposed to ultraviolet radiation from the at least one ultraviolet radiation source"   |
| 3 | '496 patent claims 1, 4, 7, and 12 | "embedded partially relaxed sublayer"  | "The p-type contact semiconductor layer and/or the n-type contact semiconductor layer incorporates within that layer a semiconductor sublayer that includes dislocations that reduce stress"   | "a sublayer that includes dislocations that reduce stress and is surrounded by the layer it is incorporated into"  |
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 Tel: 212.513.3200  
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|   |                                 |   | the only possible functional language is "dislocation blocking," requires no construction. Corresponding structures are disclosed at 8:1-4; 8:4-8; 8:9-19; 8:20-23; 8:37-41; 9:4-20; 9:21-40; 9:55-60; 10:2- 11; 10:20-11:3; 11:4-21; 11:51- 61 Figs. 7, 8, 9A, 9B, 10A, 10B, 11A, 11B, and 14 and includes equivalents thereof. The dislocation blocking structure includes a graded composition that changes from a first side of the dislocation blocking structure to a second side thereof. |   |
| 5 | '496 patent claims 1, 7, and 12 | "graded composition" [that changes from a first side of the dislocation blocking structure to a second side thereof]            | "The composition of the dislocation blocking structure changes across its thickness"   | "composition that gradually and monotonically changes from one side to the opposite side" |
| 6 | '468 patent claim 14            | "the difference in the molar fractions is selected based on a thickness of at least one of the first layer or the second layer" | Plain and ordinary meaning.  | Indefinite (both apparatus and step of using apparatus)                                   |

Holland & Knight LLP  
 31 West 52nd Street  
 New York, NY 10019  
 Tel: 212.513.3200  
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|   | Patent Claims                          | Term  | Plaintiff's Construction   | Defendant's Construction  |
|---|--|---|--|---|
| 7 | '468 patent claim 26                   | "the material"  | Refers back to the recitations: "a first layer composed of a material" and "a second layer composed of a material" for antecedent basis, <i>i.e.</i> , the first layer and second layer are both aluminum gallium nitride.   | Indefinite  |
| 8 | '133 patent claim 19                   | <p>"each period including two layers formed of group III nitride materials . . . having molar fractions x and x', where <math>x &gt; x'</math>"</p> <p>"each period including two layers formed of group III nitride materials . . . having molar fractions y and y', where <math>y &gt; y'</math>"</p> | <p>"The first superlattice includes a repeating pattern of pairs of layers, each layer includes nitrogen, aluminum and another group III element, and the repeating pattern includes repeating the same higher/lower aluminum molar fraction in each pair"</p> <p>"The second superlattice includes a repeating pattern of pairs of layers, each layer includes nitrogen, aluminum and another group III element, and the repeating pattern includes repeating the same higher/lower aluminum molar fraction in each pair"</p> | Indefinite  |
| 9 | '420 patent claims 1, 2, 4, 13, and 14 | "short period superlattice"   | "A semiconductor layer with a plurality of barrier sublayers alternating with a plurality well sublayers, where the combined thickness of a barrier and well is short (thin)."   | "a superlattice having a few-monolayer-thick wells and barriers, in which the barriers are thin enough that carriers tunnel through them" |

|    | Patent Claims               | Term                  | Plaintiff's Construction  | Defendant's Construction  |
|----|-----------------------------|-----------------------|---|---|
| 10 | '420 patent claims 1 and 13 | "transparent regions" | Plain and ordinary meaning, or in the alternative "regions of the barrier that permit light at or near the wavelength produced by the device to pass through" | Indefinite<br><br><u>In the alternative:</u><br><br>"distinct regions that have a transmission coefficient of at least 50% for a target wavelength" |

#### IV. Local Patent Rule 4-3(c) – Anticipated Hearing Length

The parties anticipate that the length of the claim construction hearing will be 3 hours. To the extent that the Court desires a technology tutorial, the parties propose that the tutorial be presented live by counsel prior to the hearing.

#### V. Local Patent Rule 4-3(d) - Witnesses

Neither party anticipates providing live testimony during the hearing. Instead, the parties intend, to the extent necessary, to submit expert declarations.

#### VI. Patent Rule 4-3(c) - Factual Findings

The parties do not currently request any factual findings related to claim construction.

Holland & Knight LLP  
31 West 52nd Street  
New York, NY 10019  
Tel: 212.513.3200  
Fax: 212.385.9010

1 Dated: March 29, 2019

2  
3 /s/ Stacey H. Wang  
4 Stacey H. Wang (SBN 245195)  
5 Vito Costanzo (SBN 132754)  
6 HOLLAND & KNIGHT LLP  
7 400 South Hope Street 8th Floor  
8 Los Angeles, CA 90071-2040  
9 Telephone: 213-896-2400  
10 Facsimile: 213-896-2450  
11 stacey.wang@hklaw.com  
12 vito.costanzo@hklaw.com

13 Michael B. Eisenberg (appearance *pro hac vice*)  
14 HOLLAND & KNIGHT LLP  
15 31 West 52nd Street  
16 New York, New York 10019  
17 Telephone: (212) 513-3529  
18 Facsimile: (212) 385-9010  
19 michael.eisenberg@hklaw.com

20 Jennifer L. Jonak (SBN 191323)  
21 JONAK LAW GROUP, P.C.  
22 2888 Arline Way Eugene, Oregon 97403  
23 Telephone: (541) 525-9102  
24 Facsimile: (541) 500-0882  
25 jenny@jonak.com

26 Attorneys for Plaintiff,  
27 SENSOR ELECTRONIC  
28 TECHNOLOGY, INC.

/s/ Marc David Peters  
Marc David Peters (CA SBN 211725)  
MDpeters@mofo.com

Daniel C. Hubin (CA SBN 278987)  
DHubin@mofo.com

Sorin G. Zaharia (CA SBN 312655)  
SZaharia@mofo.com

MORRISON & FOERSTER LLP  
755 Page Mill Road  
Palo Alto, California 94304-1018  
Telephone: 650.813.5600  
Facsimile: 650.494.0792

Attorneys for Defendants BOLB, INC. and  
QUANTUM EGG, INC.

Holland & Knight LLP  
31 West 52nd Street  
New York, NY 10019  
Tel: 212.513.3200  
Fax: 212.385.9010

**ATTESTATION PURSUANT TO CIVIL L.R. 5-1 (I)(3)**

I hereby attest that concurrence in the filing of this document has been obtained from each of the signatories.

Dated: March 29, 2019

By: /s/ Stacey H. Wang  
Stacey H. Wang

Holland & Knight LLP  
31 West 52nd Street  
New York, NY 10019  
Tel: 212.513.3200  
Fax: 212.385.9010